ELDORADO NATIONAL FOREST – AMADOR RANGER DISTRICT

DEER VALLEY 4wd MEADOW RESTORATION and BLUE LAKES ROAD MAINTENANCE PROJECT

Riparian Conservation Objectives (RCO) Consistency Report

July 14, 2015

The Deer Valley 4wd Meadow Restoration and Blue Lakes Road Maintenance Project, referred to as the Deer Valley/Blue Lakes Project in this report - is located in three HUC 7 watersheds in of the headwaters of the Mokelumne River drainage basin in the Eldorado National Forest.

This report demonstrates that Alternatives 1, 3, and 4 complies with all of the Riparian Conservation Objectives (RCOs) and associated Standards and Guidelines (S&Gs) of the Sierra Nevada Forest Plan Amendment (SNFPA) of 2004. Alternative 2 (No Action) would not comply with all of the RCOs and associated S&Gs of the 2004 SNFPA.

The SNFPA amends the Eldorado Land and Resource Management Plan of 1988.

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Riparian Conservation Objective #1

Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.

The Clean Water Act (1972) gives each state the authority to set water quality standards and designate beneficial uses of water on all lands within that state. The Eldorado National Forest is under the jurisdiction of the Central Valley Regional Quality Control Board (CVRWQCB) of California.

The Deer Valley/Blue Lakes Project includes a very small portion of the headwaters of the drainage basin of the Mokelumne River. The beneficial uses of the drainage basin are listed in Table 1. The Deer Valley/Blue Lakes Project will protect all of the designated beneficial uses of water in this drainage basin. The major reasons for this conclusion are described in detail in the *Hydrology Report* and summarized below.

- Alternatives 1, 3, and 4 would include restoration activities that should improve the condition of a number of aquatic features.
- The amount of ground disturbance within and adjacent to aquatic features and their associated Riparian Conservation Areas (RCAs) would be extremely small under Alternatives 1, 3, and 4.

Table 1. Beneficial uses of water in the drainage basin that contain the Deer Valley/Blue Lakes Project (CVRWQCB 2014).

		MUN	AGRIGULTURE		INDUSTRY			RECREATION			FRESHWATER HABITAT (2)		MIGRATION		SPAWNING		WILD	NAV
			AGR		PROC	IND	POW	REC-1		REC-2	Warm	Cold	MIGR		SPWN			
	Hydro Unit Number	Municipal and domestic supply	Irrigation	Stock Watering	Process	Service Supply	Power	Contact	Canoeing and rafting (1)	Other Non-contact	Warm	Cold	Warm (3)	Cold (4)	Warm (3)	Cold (4)	Wildlife habitat	Navigation
Mokelumne River (Sources to Pardee Reservoir)	532.6	E					E	E	E	E	E	E	E		E	E	E	

E = existing P = Potential

	Standards and Guidelines associated with RCO #1		
Num-ber	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4**	**Analysis of Standard and Guideline with respect to Alternative 2 (No Action)**
95	For waters designated as Water Quality Limited (Clean Water Act Section 303(d), participate in the development of Total Maximum Daily Loads (TMDLs) and TMDL Implementation Plans. Execute applicable elements of completed TMDL Implementation Plans.	The Mokelumne River upstream of the Bear River Reservoir is not on the 303(d) list.	
96	Ensure that management activities do not adversely affect water temperatures necessary for local aquatic-and riparian dependent species assemblages.	There would be no reduction in the amount of shade on any water body because vegetation near aquatic features would not be removed. As a result, water temperatures would not be affected by any alternative.	
97	Limit pesticide applications to cases where project level analysis indicates that pesticide applications are consistent with riparian conservation objectives.	There would be no application of pesticides or herbicides under any alternative.	
98	Within 500 feet of known occupied sites for the California red-legged frog, Cascades frog, Yosemite toad, foothill yellow-legged frog, mountain yellow legged frog, and northern leopard frog, designate pesticide applications to avoid adverse effects to individuals and their habitats.	There would be no application of pesticides or herbicides under any alternative.	
99	Prohibit storage of fuels and other toxic materials within RCAs and CARS except at designated administrative sites and sites covered by a Special Use Authorization. Prohibit refueling with RCAs and CARS unless there are no other alternatives. Ensure that spill plans are reviewed and up-to-date.	There are no CARs in the project area. No fuel storage would take place within RCAs. Refueling would take place in RCAs only where there is no other alternative. Spill prevention and cleanup of hazardous materials would be implemented in accordance with FS timber sale type B contract clauses and in accordance with the Eldorado Hazardous Spill Notification and Response Plan.	There would be no use of fuels or other toxic materials under Alternative 2 (No Action).

Riparian Conservation Objective #2

Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.

The DEER VALLEY/BLUE LAKES PROJECT is not expected to alter the geomorphic or biological characteristics of special aquatic features, streams, or hydrologic connectivity within/between watersheds. This is largely the result of the site-specific design features of the project, as described in Tables 5 and 6 of the *Hydrology Report*.

	Standards and Guidelines associated with RCO #2		
Num-ber	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4.**	**Analysis of Standard and Guideline with respect to Alternative 2 (No Action)**
100	Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface flow paths. Implement corrective actions where necessary to restore connectivity.	Repairs to the Blue Lakes Road (09N01) would bring the road and meadows crossed or bordered by this road into compliance with Standard & Guideline #100 of the 2004 Sierra Nevada Forest Plan Amendment. These specific actions are described in detail in Table 3 of the *Hydrology Report* (Markman 2015).	The Blue Lakes Road (09N01) and the meadows crossed or bordered by this road) would not be brought into compliance with Standard & Guideline #100 of the 2004 Sierra Nevada Forest Plan Amendment. This is because the actions to bring these meadows into compliance, as described in Table 3 of the *Hydrology Report*, would not occur. In addition, it is likely that additional degradation of the meadows crossed or bordered by the Blue Lakes Road would occur. This is described in more detail in the *Hydrology Report* (Markman 2015).
101	Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic dependent species. Locate water drafting sites to avoid adverse effects to in stream flows and depletion of pool habitat. Where possible, maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features.	Several of the culverts associated with the Blue Lakes Road (09N01) would be replaced with culverts or other structures that allow passage for the 100-year flow event and sediment and debris carried by the flow event. The new culverts or other structures would allow passage of aquatic dependent species.	Alternative 1 (Proposed Action) would not remove culverts associated with the Blue Lakes Road (09N01). This means that at least several of the culverts would remain undersized and not allow passage for the 100-year flow event and sediment and debris carried by the flow event.

102	Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs.	Alternatives 1, 3, and 4 contains site-specific measures that are expected reduce degradation of Blue Creek and Deer Creek where trail 19E01 crosses the two streams. This is described in the Hydrology Report *(Markman 2015)*.	Alternative 2 (No Action) does not contain site-specific measures that are expected reduce degradation of Blue Creek and Deer Creek where trail 19E01 crosses the streams.
103	Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under Special Use Permits and designated off-highway routes.	Alternatives 1, 3, and 4 contain site-specific measures to re-vegetate streambanks of Deer Creek and Blue Creek that have been damaged by past OHV use.	Alternative 2 (No Action) does not contain site-specific measures to re-vegetate streambanks of Deer Creek and Blue Creek that have been damaged by past OHV use.
104	**Part 1:** In stream reaches occupied by, or identified as "essential habitat" in the conservation assessment for, the Lahonton and Paiute cutthroat trout and the Little Kern golden trout, limit streambank disturbance from livestock to 10 percent of the occupied or "essential habitat" stream reach. (Conservation assessments are described in the record of decision.) **Part 2:** Cooperate with State and Federal agencies to develop streambank disturbance standards for threatened, endangered, and sensitive species. Use the regional streambank assessment protocol. Implement corrective action where disturbance limits have been exceeded.	Part 1: **Not applicable.** Part 1 of S&G 104 limits streambank disturbance from livestock to 10% of occupied Lahontan Cutthroat Trout habitat. This is not applicable to this project because the project area does not fall within a grazing allotment. Part 2: **Not applicable.** Although Part 2 of S&G 104 applies to all T&E and Sensitive Species, the streambank disturbance standards caused by resource activities defer to those stated in S &G 103 (above). The streambank disturbance standards described in S & G 103 however, do not apply to designated OHV routes (i.e. 09E01 and 09N01).	
105	At either the landscape or project-scale, determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability, consider implementing mitigation and/or restoration actions that will result in an upward trend.	Alternatives 1, 3, and 4 contain site-specific measures to re-vegetate streambanks of Deer Creek and Blue that have been damaged by past OHV use.	Alternative 2 (No Action) does not contain site-specific measures to re-vegetate streambanks of Deer Creek and Blue Creek that have been damaged by past OHV use.

106	Cooperate with Federal, Tribal, State, and local governments to secure in stream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat. Maintain in stream flows protect aquatic systems to which species are uniquely adapted. Minimize the effects of stream diversions or other flow modifications from hydroelectric projects on threatened, endangered, and sensitive species.	None of the alternatives involves stream diversions or other flow modifications.
107	For exempt hydroelectric facilities on national forest lands, ensure that special use permit language provides adequate in stream flow requirements to maintain, restore, or recover favorable ecological conditions for local and riparian-and aquatic-dependent species.	Not applicable. There are no hydroelectric facilities associated with the Deer Valley/Blue Lakes Project.

Riparian Conservation Objective #3

Ensure a renewable supply of large down logs that: (1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the RCA.

	Standards and Guideline associated with RCO #3		
Number	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4**	**Analysis of Standard and Guideline with respect to Alternative 2 (No Action)**
108	Determine if the level of coarse woody debris (CWD) is within the range of natural variability in terms of frequency and distribution of sustain stream channel physical complexity and stability. Ensure proposed management activities move conditions toward the range of natural variability.	A few trees would be removed within the RCA of Deer Creek in order to construct 500 ft. re-route of trail 19E01. The removal of a few trees has negligible effect on the level of CWD in Deer Creek.	No trees would be removed under Alternative 2 (No Action).

Riparian Conservation Objective #4

Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.

	Standards and Guidelines associated with RCO #4		
Number	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4)**	**Analysis of Standard and Guideline with respect to Alternative 2 (No Action)**
109	With CARS, in occupied habitat or "essential habitat" as identified in conservation assessments for threatened, endangered or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fire may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.	Prescribed fire is not part of any alternative.	
110	Use screening devices for water drafting pumps. (Fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species from aquatic habitats.	There would be no drafting of water from aquatic features.	
111	Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include, or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining which mitigation measures to adopt, weigh the potential harm of mitigation measures, for example fire lines, against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could be damaging to habitat or long-term function of the riparian community.	Prescribed fire is not part of Alternative 1 (Proposed Action) or Alternative 2 (No Action).	
112	Post-wildfire management activities in RCAs and CARs should emphasize enhancing native vegetation cover, stabilizing channels by non-structural means, minimizing adverse effects from the existing road network, and carrying out activities identified in landscape analysis. Post-wildfire operations shall minimize the exposure of bare soil.	Not applicable. Deer Valley/Blue Lakes Project does not propose post-wildfire management activities.	Not applicable. The Deer Valley/Blue Lakes Project does not propose post-wildfire management activities.

113	Allow hazard tree removal within RCAs or CARs. Allow mechanical ground disturbing fuels treatments, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs. Utilize low ground pressure equipment, helicopters, over the snow logging, or other non-ground disturbing actions operate off of exiting roads when needed to achieve RCOs. Ensure that existing roads, landings, and skid trails or roads for access into RCAs for fuel treatments, salvage harvest, commercial fuelwood cutting, or hazard tree removal.	None of the activities listed in Standard &Guideline #113 would occur.	None of the activities listed in Standard &Guideline #113 would occur.
114	As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for California red-legged frog (CRLF), Cascades frog (CF), Yosemite toad (YOTO), foothill (FYLF) and mountain yellow legged frogs (SNYLF), and northern leopard frog (NLF).	There is no suitable CRLF, CF, FYLF, or NLF habitat in the project area (it is above their elevation ranges). Surveys were conducted within the project area to assess and document the suitability of the habitats for both the SNYLF and YOTO. The SNYLF and YOTO suitable habitat is mapped and displayed in Figures 4 and 8 in the Aquatics BE (see project record). The potential effects that proposed project activities may have on the suitable habitat are also disclosed in the Aquatics BE.	No ground disturbing activities would occur.
115	During fire suppression activities, consider impacts to aquatic- and riparian-dependent resources. Where possible, locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of RCAs or CARs. During pre-suppression planning, determine guidelines for suppression activities, including avoidance of potential adverse effects to aquatic-and riparian-dependent species as a goal.	Not applicable. None of the activities listed in S&G #115 would occur.	
116	Identify roads, trails, OHV trails and staging areas, developed recreation sites, dispersed campground, special use permits, grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines or desired conditions.	Not applicable. The Deer Valley/Blue Lakes Project does not involve landscape analysis. Alternatives 1, 3, and 4 have been designed to meet Standard & Guideline #100 for the Blue Lakes Road (09N01).	

Riparian Conservation Objective #5

Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.

	Standards and Guidelines associated with RCO #5	
Number	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4.**
117	Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) "Process for Assessing PFC" TR 1737-9, "PFC for Lotic Areas" UDSI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994).	Not applicable. There will be no range management analysis as part of the Deer Valley/Blue Lakes Project.
118	Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic process that maintain water flow, water quality, or water temperatures critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, human, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, presence of: (1) sphagnum moss (*Spagnum spp*.), (2) mosses belonging to the genus *Meessia*, and (3) sundew (*Drosera sppl*.) Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.	Not applicable. There are known bogs and/or fens associated with the project.
119	Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in riparian conservation areas with riparian conservation objectives.	Not applicable. Grazing management and new livestock gathering facilities are not part of the Deer Valley/Blue Lakes Project.
120	Under season-long grazing: ▪ For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height). ▪ For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height). Determine ecological status. on all key areas monitored for gazing utilization . . . Analyze meadow ecological status . . . Under intensive grazing systems . . .	
121	Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation.	

Riparian Conservation Objective #6

Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.

Standards and Guideline associated with RCO #6			
Number	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4)**	**Analysis of Standard and Guideline with respect to Alternative 2 (No Action)**
122	Recommend restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests, that may be contributing to the observed degradation.	Alternatives 1, 3, and 4 contain measures to improve the condition of meadows crossed or bordered by the Blue Lakes Road (09N01), reduce the amount of sediment contributed to Deer Creek from trail 19E01, and re-vegetate streambanks of Deer Creek and Blue Creek that are degraded as result of OHV use. These measures are described in detail the *Hydrology Report.*	Alternative 2 (No Action) would not contain measures to improve the condition of meadows crossed or bordered by the Blue Lakes Road (09N01), reduce the amount of sediment contributed to Deer Creek from trail 19E01, and re-vegetate streambanks of Deer Creek and Blue Creek that are degraded as result of OHV use.

Number	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives 1, 3, and 4**
123	Determine which critical aquatic refuges or areas within critical aquatic refuges are suitable for mineral withdrawal. Propose these areas for withdrawal from location and entry under U.S. mining laws, subject to valid existing rights, for a term of 20 years.	Not applicable. No known suitable mineral withdrawal sites exist within the project areas.
124	Approve mining-related plans of operation if measures are implemented that contribute toward the attainment or maintenance of aquatic management strategy goals.	Not applicable. No mining-related plans of operation exist within the project areas.

	Additional Standards and Guideline for Riparian Conservation Areas and Critical Aquatic Refuges	
Number	**Standard and Guideline**	**Analysis of Standard and Guideline with respect to Alternatives,1 ,3 and 4**
91	Designate riparian conservation area (RCA) widths as described in Part B of this appendix. The RCA widths displayed in Part B may be adjusted at the project level if a landscape analysis has been completed and a site-specific RCO analysis demonstrates a need for different widths.	RCA widths were designated as described in the Sierra Nevada Forest Plan Amendment of 2004.
92	Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the AMS goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.	Activities within RCAs were evaluated by an interdisciplinary team on-the-ground. Site specific measures to improve the condition of meadows crosses and/or bordered by the Blue Lakes Road (09N01) are described in the *Hydrology Report*.
93	Identify existing uses and activities in CARs and RCAs during landscape analysis. At the time of permit reissuance, evaluate and consider actions needed for consistency with RCOs.	The Deer Valley/Blue Lakes Project does not included landscape analysis.
94	As part of project-level analysis, conduct peer reviews for projects that proposed ground-disturbing activities in more than 25 percent of the RCA or more than 15 percent of a CAR.	Ground-disturbing activities would occur in a small portion of aquatic features and associated RCAs. This is described in more detail in the *Hydrology Report.*

REFERENCES CITED

CVRWQCB (Central Valley Regional Water Quality Control Board). 2014. Internet Site containing the proposed 303(d) list for the central valley region of California http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r5_final303dlist.pdf

CVRWQCB (Central Valley Regional Water Quality Control Board). 2014. Internet site containing Basin Plan for the Central Valley Region. http:/www.swrcb.ca.gov/centralvalley/water_issues/basin_plans

Dissmeyer, George, E, editor. 2000. Drinking water from forest and grasslands: A Synthesis of the Scientific Literaure. United States Department of Agriculture, Forest Service. General Technical Report SRS-39.

Reid, Leslie M. and Sue Hilton. 1998. Buffering the buffer. USDA Forest Service General Technical Report, PSW-GTR-168.

USDA Forest Service. December 2011. Water Quality Management for Forest System Lands in California, Best Management Practices. Pacific Southwest Region.

USDA Forest Service. 2010. Cumulative Watershed Effects of Fuel Management in the Western United States. General Technical Report RMRS-GTR-231.

USDA Forest Service. January 2004. Sierra Nevada Forest Plan Amendment, Final Environmental Impact Statement, Record of Decision.